

# Announcement for Applying for Pre-Qualification for Taipower's Term Coal Tenders

## 1. Purpose of Pre-Qualification

Taiwan Power Company (“Taipower”) is inviting all interested suppliers (“Applicant(s)”) to submit their qualification documents for pre-qualification evaluation. Based on this evaluation, Taipower will revise the current Qualified Suppliers Lists of Term Coal Tenders (hereinafter referred to as “Qualified Suppliers Lists”) for Quality Specifications including A1(A1-1), A2(A2-1), A3(A3-1), A4(A4-1), B(B-1), C1, C2, C3, C4, D1, D2(D2-1), D3, D4, G1 and G2 **as shown in Attachments A1, A2, A3, A4, B, C1, C2, C3, C4, D1, D2, D3, D4, G1 and G2 of the Instructions for Applying for Pre-Qualification for Taipower's Term Coal Tenders (“Instructions”), respectively.** All the qualified suppliers on the Qualified Suppliers Lists for a specific quality specifications will be invited to participate in future term coal tenders for the corresponding coal quality specifications unless the Applicant is prohibited from participating in tendering or being awarded by the Government Procurement Act (hereinafter referred to as “Act”).

Taipower will use selective tendering procedures, as described in Articles 18, 20 and 21 of the Act, to proceed with such term coal tenders.

An Applicant who has been previously qualified and listed on the current Qualified Suppliers Lists is required to provide updated supplier and mine qualification information for Taipower's review in order to remain on the lists. **If the above-mentioned updated information does not meet Taipower's criteria or the Applicant does not provide the updated supplier and mine qualification information, the said Applicant shall be removed from the Qualified Suppliers Lists.**

## 2. Deadline for Submission of Qualification Documents

The qualification documents should be received by Taipower no later than **17:00 3/29 (Taipei Time)**. Qualification documents submitted after the deadline will be evaluated only if time permits.

## 3. Basic Qualification Requirements for Applicant and Its Proposed Mine

### (1) Basic Qualifications for an Applicant :

A. An Applicant proposing to supply coal produced from a mine located in a country or an area other than China must have the right to sell the coal produced from the proposed mine and must meet one of the following qualifications:

(a) Owner who

- (i) has been granted the mining permit (such as coal mining license, coal mining lease or equivalent documents) by competent governmental authority and whose name appears on the mining permit for the proposed mine; or
- (ii) is one of two or more companies holding the competent mining permit, its prorated share of the quantity of exported coal from the proposed mine satisfies the criteria set forth in section 3.(2)C of the Announcement, and its name is one of the names on the document of mining permit.

(b) Producer who

has signed a valid contract with a mining permit holder, which authorizes the Applicant to mine and sell the coal produced from the proposed mine. The duration of foregoing contract should not be less than the term of Taipower's term coal contract in tendering.

(c) Sales Company who

- (i) is **wholly owned** by Owner or Producer of the proposed mine; or
- (ii) is a **wholly-owned** sales company of a joint venture of the proposed mine. In addition, the said joint venture has already established another **wholly-owned** company to hold the relevant mining permit for the proposed mine and whose name shall appear on the document of mining permit.
- (iii) is an **exclusively duly authorized international** sales company of the proposed mine. The sales company has the exclusive right to sell the coal produced from the proposed mine to the international market, which means all coal produced from the proposed mine can **ONLY** been sold to customers through the sales company. Under such circumstance, Owner or Producer of the proposed mine is not allowed to participate in this PQ process.

B. An Applicant proposing to supply coal from China must be:

- (a) incorporated under the law of China which has received the competent China authority's approval to export coal to Taiwan; or
- (b) incorporated under the law of third country or area other than Taiwan and China and must be appointed and authorized by a company in China which has received the competent China authority's approval to export coal to Taiwan.

(2) Basic Qualification Requirements for Applicant's proposed Mine:

A. The proposed mine must be in operation.

B. The proposed mine must hold a valid mining permit issued by competent

governmental authority and the Applicant must provide a photocopy of such permit.

- C. The quantity of exported coal produced from a proposed mine, with coal quality meeting Taipower's quality specifications as shown in Attachment A1, A2, A3, A4, B, C1, C2, C3, C4, D1, D2, D3, D4, G1 and G2 shall meet at least one of the following criteria:
- (a) The accumulated exported quantity within the last 5 years (**2019 to 2023**, hereinafter referred to as "Last 5 Years") is not less than the total nominal contractual quantity of Taipower's term tenders. For example, for a one-year term tender, The accumulated exported quantity within the Last 5 Years is not less than 500,000 metric tons (= 500,000 metric tons X 1); for a 10-year term tender, The accumulated exported quantity within the Last 5 Years is not less than 5,000,000 metric tons (= 500,000 metric tons X 10);
  - (b) The accumulated exported coal quantity within the Last 5 Years under a single contract signed by the Applicant with its contracting party is not less than two fifths of the total nominal contractual quantity of Taipower's term tenders. For example, for a one-year term tender, the accumulated exported quantity within the Last 5 Years under a single contract signed by the Applicant with its contracting party is not less than 200,000 metric tons (= 500,000 metric tons X 1 X 40% ); for a 10-year term tender, the accumulated exported quantity within the Last 5 Years under a single contract signed by the applicant with its contracting party is not less than 2,000,000 metric tons (= 500,000 metric tons X 10 X 40%);
  - (c) The accumulated exported coal quantity within any 12 consecutive months of the Last 5 Years is not less than 600,000 metric tons.

Note:

The quality certificated of export shipments as evidences for Section 3.(2).C shall be issued by the inspection companies of international standing. For future Taipower's term coal tenders, only qualified suppliers whose accumulated exported coal quantities produced from qualified mines meet at least one of the criteria specified in Section 3.(2).C will be invited to participate in the corresponding term coal tenders.

- D. If the proposed mine which meets the Quality Specification A1 is from Australia, Canada, China, South Africa or the United States, the proposed mine will be attributed to A1-1 automatically.
- E. If the proposed mine which meets the Quality Specification A2 is from Australia, Canada, China, South Africa or the United States, the proposed mine will be attributed to A2-1 automatically.
- F. If the proposed mine which meets the Quality Specification A3 is from Australia, Canada, China, South Africa or the United States, the proposed mine will be attributed to A3-1 automatically.

- G. If the proposed mine which meets the Quality Specification A4 is from Australia, Canada, China, South Africa or the United States, the proposed mine will be attributed to A4-1 automatically.
- H. If the proposed mine which meets the Quality Specification B is from Australia, Canada, China, South Africa or the United States, the proposed mine will be attributed to B-1 automatically.
- I. If the proposed mine which meets the Quality Specification D2 is from Australia, Canada, China, South Africa or the United States, the proposed mine will be attributed to D2-1 automatically.
- J. The remaining mine life of the proposed mine must not be less than the term of term coal contract in tendering. The calculation of remaining mine life is set forth in the relevant Application Form.
- K. The facilities of the loading port for the proposed mine must be adequate for accommodating vessels to be nominated by Taipower. The loading port and berth shall at least be able to accommodate Panamax size vessel with minimum draft of channel and berth no less than **14.5** meters.
- L. The proposed mine must be evaluated and determined by Taipower as a qualified mine for supplying the coal under term coal tenders.

#### 4. Request for Application document of Pre-Qualification

- (1) For an Applicant who is **NOT** on current Taipower's Qualified Suppliers Lists, please contact Taipower by email or fax to receive Instructions for Applying for Pre-Qualification.
- (2) For an Applicant who **IS** on current Taipower's Qualified Suppliers Lists but plans to propose a mine which has **NOT** been qualified and listed on Taipower's Qualified Suppliers Lists, please contact Taipower by email or fax to receive Instructions for Applying for Pre-Qualification.
- (3) For an Applicant with its proposed mine **IS** on current Taipower's Qualified Suppliers Lists, Taipower will furnish Instruction for applying for Pre-Qualification directly. The supplier is required to provide updated information for the supplier and mine.

Please submit your request to:

Thermal Coal Section

Department of Fuels

Taiwan Power Company

9Fl., No. 242, Roosevelt Road, Section 3, Taipei City 100208, Taiwan, R.O.C.

Tel. No.: 886-2-2366-6755

Fax No.: 886-2-2367-0597

Email Address: u330074@taipower.com.tw

You are requested to give us your email address so that we may send Application Form and the Instructions by email.

**Attachment A1****Quality Specifications for Taipower's Term Tender of General Bituminous Coal – Quality A1****October , 2016**

<b>Item</b>	<b>Minimum / Maximum</b>		
<b>1. Gross Calorific Value</b> (kcal/kg) <b>A.R.</b>	<b>5,900</b>		<b>Min.</b> (Remark 1)
<b>2. Total Moisture</b> (%) <b>A.R.</b>	<b>15</b>		<b>Max.</b> (Remark 2)
<b>3. Ash Content</b> (%) <b>A.D.</b>	<b>15</b>		<b>Max.</b>
<b>4. Sulphur Content</b> (%) <b>A.D.</b>	<b>0.9</b>		<b>Max.</b>
<b>5. Volatile Matter</b> (%) <b>A.D.</b>	<b>26</b>		<b>Min.</b>
<b>6. Fixed Carbon</b> (%) <b>A.D.</b>	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b> (mg/kg)	<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b> ( <b>H.G.I.</b> )	<b>45</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b> (reducing, H=W)      (°C)	<b>1,150</b>		<b>Min.</b>
<b>10. Size (mm)</b>	<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
	<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b> (%)	<b>Remark 3</b>		

**Remarks:**

- 1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.**
- 2. Total Moisture can be raised to 18% max if Ash Content is less than 10%.**
- 3. Na<sub>2</sub>O in Ash**
  - (1) If the actual Ash Content is greater than 7%,  
Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.**
  - (2) If the actual Ash Content is equal to or less than 7%,  
Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.**
- 4. A.R. means As Received Basis; A.D. means Air Dried Basis.**

**Attachment A2****Quality Specifications for Taipower's Term Tender of General Bituminous Coal – Quality A2****October, 2016**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>6,200</b>		<b>Min.</b>
	(kcal/kg)	A.R.		(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>15</b>		<b>Max.</b>
				(Remark 2)	
<b>3. Ash Content</b>	(%)	A.D.	<b>14</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.7</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>26</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>45</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,200</b>		<b>Min.</b>
	(reducing, H=W)	(°C)			
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 3</b>

**Remarks:**

1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.

2. Total Moisture can be raised to 18% max if Ash Content is less than 10% .

**3. Na<sub>2</sub>O in Ash**

(1) If the actual Ash Content is greater than 7%,

Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.

(2) If the actual Ash Content is equal to or less than 7%,

Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.

4. A.R. means As Received Basis; A.D. means Air Dried Basis.

**Attachment A3****Quality Specifications for Taipower's Term Tender of Low Ash General Bituminous Coal – Quality A3****January, 2020**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>6,200</b>		<b>Min.</b>
	(kcal/kg)	A.R.		(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>15</b>		<b>Max.</b>
				(Remark 2)	
<b>3. Ash Content</b>	(%)	A.D.	<b>10</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.7</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>26</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>45</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,200</b>		<b>Min.</b>
	(reducing, H=W)	(°C)			
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 3</b>

**Remarks:**

1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.

2. Total Moisture can be raised to 18% max if Ash Content is less than 10% .

**3. Na<sub>2</sub>O in Ash**

(1) If the actual Ash Content is greater than 7%,

Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.

(2) If the actual Ash Content is equal to or less than 7%,

Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.

4. A.R. means As Received Basis; A.D. means Air Dried Basis.

**Attachment A4****Quality Specifications for Taipower's Term Tender of General Bituminous Coal – Quality A4****December, 2022**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>6,200</b>		<b>Min.</b>
	(kcal/kg)	A.R.		(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>15</b>		<b>Max.</b>
				(Remark 2)	
<b>3. Ash Content</b>	(%)	A.D.	<b>14</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.7</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>26</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>42</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,200</b>		<b>Min.</b>
	(reducing, H=W)	(°C)			
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 3</b>

**Remarks:**

1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.

2. Total Moisture can be raised to 18% max if Ash Content is less than 10% .

**3. Na<sub>2</sub>O in Ash**

(1)If the actual Ash Content is greater than 7%,

Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.

(2)If the actual Ash Content is equal to or less than 7%,

Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.

4. A.R. means As Received Basis; A.D. means Air Dried Basis.



**Attachment B****Quality Specifications for Taipower's Term Tender of General Bituminous Coal – Quality B****June, 2018**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>5,500</b>		<b>Min.</b>
	(kcal/kg)	A.R.		(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>20</b>		<b>Max.</b>
				(Remark 2)	
<b>3. Ash Content</b>	(%)	A.D.	<b>8</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.7</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>26</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>42</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,150</b>		<b>Min.</b>
	(reducing, H=W)	(°C)			
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 3</b>

**Remarks:**

1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.
2. Total Moisture can be raised to 22% max if Ash Content is less than 10% .
3. Na<sub>2</sub>O in Ash
  - (1) If the actual Ash Content is greater than 7%,  
Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.
  - (2) If the actual Ash Content is equal to or less than 7%,  
Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.
4. A.R. means As Received Basis; A.D. means Air Dried Basis.

**Attachment C1****Quality Specifications for Taipower's Term Tender of Low-Ash & Extra Low-Sulphur Subbituminous Coal – Quality C1****October, 2016**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>4,800</b>		<b>Min.</b>
	(kcal/kg)	A.R.		(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>30</b>		<b>Max.</b>
<b>3. Ash Content</b>	(%)	A.D.	<b>4</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.12</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>26</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>42</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,150</b>		<b>Min.</b>
	(reducing, H=W)	(°C)			
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 2</b>

**Remarks:**

1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.

**2. Na<sub>2</sub>O in Ash**

(1) If the actual Ash Content is greater than 7%,

Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.

(2) If the actual Ash Content is equal to or less than 7%,

Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.

3. A.R. means As Received Basis; A.D. means Air Dried Basis.

**Attachment C2**  
**Quality Specifications for Taipower's Term Tender of Low-Ash & Extra Low-Sulphur Subbituminous Coal – Quality C2**

**October, 2016**

Item			Minimum / Maximum		
1. Gross Calorific Value	(kcal/kg)	A.R.	4,800		Min.
				(Remark 1)	
2. Total Moisture	(%)	A.R.	30		Max.
3. Ash Content	(%)	A.D.	6		Max.
4. Sulphur Content	(%)	A.D.	0.2		Max.
5. Volatile Matter	(%)	A.D.	26		Min.
6. Fixed Carbon	(%)	A.D.	60		Max.
7. Mercury Content	(mg/kg)		0.12		Max.
8. Grindability	(H.G.I.)		42		Min.
9. Ash Fusion Temperature			1,150		Min.
10. Size (mm)			>50mm	5 %	Max.
			<2mm	35 %	Max.
11. Na <sub>2</sub> O in Ash	(%)				Remark 2

**Remarks:**

1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.

2. Na<sub>2</sub>O in Ash

(1) If the actual Ash Content is greater than 7%,

Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.

(2) If the actual Ash Content is equal to or less than 7%,

Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.

3. A.R. means As Received Basis; A.D. means Air Dried Basis.

**Attachment C3****Quality Specifications for Taipower's Term Tender of Low-Ash & Extra Low-Sulphur Subbituminous Coal – Quality C3****January, 2018**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>4,500</b>		<b>Min.</b>
	(kcal/kg)	A.R.		(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>32</b>		<b>Max.</b>
<b>3. Ash Content</b>	(%)	A.D.	<b>6</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.2</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>26</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>42</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,150</b>		<b>Min.</b>
	(reducing, H=W)	(°C)			
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 2</b>

**Remarks:**

1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.
2. Na<sub>2</sub>O in Ash
  - (1) If the actual Ash Content is greater than 7%,  
Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.
  - (2) If the actual Ash Content is equal to or less than 7%,  
Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.
3. A.R. means As Received Basis; A.D. means Air Dried Basis.

**Attachment C4****Quality Specifications for Taipower's Term Tender of Low-Ash & Extra Low-Sulphur Subbituminous Coal – Quality C4****December, 2022**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>4,200</b>		<b>Min.</b>
	(kcal/kg)	A.R.		(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>39</b>		<b>Max.</b>
<b>3. Ash Content</b>	(%)	A.D.	<b>6</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.2</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>26</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>42</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,150</b>		<b>Min.</b>
	(reducing, H=W)	(°C)			
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 2</b>

**Remarks:**

1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.
2. Na<sub>2</sub>O in Ash
  - (1) If the actual Ash Content is greater than 7%,  
Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.
  - (2) If the actual Ash Content is equal to or less than 7%,  
Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.
3. A.R. means As Received Basis; A.D. means Air Dried Basis.

**Attachment D1****Quality Specifications for Taipower's Term Tender of General Subbituminous Coal – Quality D1****October, 2016**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>5,000</b>		<b>Min.</b>
	(kcal/kg)	A.R.		(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>28</b>		<b>Max.</b>
<b>3. Ash Content</b>	(%)	A.D.	<b>8</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.9</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>28</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>42</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,150</b>		<b>Min.</b>
	(reducing, H=W)	(°C)			
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 2</b>

**Remarks:****1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.****2. Na<sub>2</sub>O in Ash****(1) If the actual Ash Content is greater than 7%,****Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.****(2) If the actual Ash Content is equal to or less than 7%,****Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.****3. A.R. means As Received Basis; A.D. means Air Dried Basis.**

**Attachment D2****Quality Specifications for Taipower's Term Tender of General Subbituminous Coal – Quality D2****April, 2017**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>5,000</b>		<b>Min.</b>
	(kcal/kg)	A.R.		(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>28</b>		<b>Max.</b>
<b>3. Ash Content</b>	(%)	A.D.	<b>11</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.9</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>28</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>42</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,150</b>		<b>Min.</b>
	(reducing, H=W) (°C)				
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 2</b>

**Remarks:**

**1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.**

**2. Na<sub>2</sub>O in Ash**

**(1) If the actual Ash Content is greater than 7%,**

**Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.**

**(2) If the actual Ash Content is equal to or less than 7%,**

**Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.**

**3. A.R. means As Received Basis; A.D. means Air Dried Basis.**

**Attachment D3****Quality Specifications for Taipower's Term Tender of General Subbituminous Coal – Quality D3****January, 2018**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>4,700</b>		<b>Min.</b>
(kcal/kg)	A.R.			(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>32</b>		<b>Max.</b>
<b>3. Ash Content</b>	(%)	A.D.	<b>8</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.9</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>28</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>42</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,150</b>		<b>Min.</b>
(reducing, H=W)	(°C)				
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 2</b>

**Remarks:**

1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.

2. Na<sub>2</sub>O in Ash

(1) If the actual Ash Content is greater than 7%,

Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.

(2) If the actual Ash Content is equal to or less than 7%,

Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.

3. A.R. means As Received Basis; A.D. means Air Dried Basis.



**Attachment D4****Quality Specifications for Taipower's Term Tender of General Subbituminous Coal – Quality D4****June, 2022**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>5,000</b>		<b>Min.</b>
(kcal/kg)	<b>A.R.</b>			<b>(Remark 1)</b>	
<b>2. Total Moisture</b>	<b>(%)</b>	<b>A.R.</b>	<b>28</b>		<b>Max.</b>
<b>3. Ash Content</b>	<b>(%)</b>	<b>A.D.</b>	<b>13</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	<b>(%)</b>	<b>A.D.</b>	<b>0.9</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	<b>(%)</b>	<b>A.D.</b>	<b>28</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	<b>(%)</b>	<b>A.D.</b>	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	<b>(mg/kg)</b>		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	<b>(H.G.I.)</b>		<b>42</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,150</b>		<b>Min.</b>
(reducing, H=W)	<b>(°C)</b>				
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	<b>(%)</b>				<b>Remark 2</b>

**Remarks:**

- Gross Calorific Value** greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.
- Na<sub>2</sub>O in Ash**
  - If the actual Ash Content is greater than 7%,  
Na<sub>2</sub>O in Ash is 2% Max; if both actual (a) CaO+MgO > Fe<sub>2</sub>O<sub>3</sub>, and actual (b) CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% are met, then Na<sub>2</sub>O in Ash can be raised to 5.0% Max.
  - If the actual Ash Content is equal to or less than 7%,  
Na<sub>2</sub>O in Ash is 3% Max; if CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 6.0% Max.
- A.R.** means As Received Basis; **A.D.** means Air Dried Basis.

**Attachment G1****Quality Specifications for Taipower's Term Tender of Low-Ash  
& Low-Sulfur Subbituminous Coal – Quality G1****November, 2021**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>5,000</b>		<b>Min.</b>
	(kcal/kg)	A.R.		(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>30</b>		<b>Max.</b>
<b>3. Ash Content</b>	(%)	A.D.	<b>8</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.5</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>28</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>42</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,150</b>		<b>Min.</b>
	(reducing, H=W)	(°C)			
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 2</b>

**Remarks:**

1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.
2. Na<sub>2</sub>O in Ash is 3% Max; if actual CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 9.0% Max
3. A.R. means As Received Basis; A.D. means Air Dried Basis.

**Attachment G2****Quality Specifications for Taipower's Term Tender of Low-Ash Subbituminous Coal – Quality G2****November, 2021**

Item			Minimum / Maximum		
<b>1. Gross Calorific Value</b>			<b>5,000</b>		<b>Min.</b>
	(kcal/kg)	A.R.		(Remark 1)	
<b>2. Total Moisture</b>	(%)	A.R.	<b>30</b>		<b>Max.</b>
<b>3. Ash Content</b>	(%)	A.D.	<b>8</b>		<b>Max.</b>
<b>4. Sulphur Content</b>	(%)	A.D.	<b>0.7</b>		<b>Max.</b>
<b>5. Volatile Matter</b>	(%)	A.D.	<b>28</b>		<b>Min.</b>
<b>6. Fixed Carbon</b>	(%)	A.D.	<b>60</b>		<b>Max.</b>
<b>7. Mercury Content</b>	(mg/kg)		<b>0.12</b>		<b>Max.</b>
<b>8. Grindability</b>	(H.G.I.)		<b>42</b>		<b>Min.</b>
<b>9. Ash Fusion Temperature</b>			<b>1,150</b>		<b>Min.</b>
	(reducing, H=W)	(°C)			
<b>10. Size (mm)</b>			<b>&gt;50mm</b>	<b>5 %</b>	<b>Max.</b>
			<b>&lt;2mm</b>	<b>35 %</b>	<b>Max.</b>
<b>11. Na<sub>2</sub>O in Ash</b>	(%)				<b>Remark 2</b>

**Remarks:**

1. Gross Calorific Value greater than 6,900 kcal/kg will be treated as 6,900 kcal/kg.
2. Na<sub>2</sub>O in Ash is 3% Max; if actual CaO+MgO+Fe<sub>2</sub>O<sub>3</sub> > 20% is met, then Na<sub>2</sub>O in Ash can be raised to 9.0% Max
3. A.R. means As Received Basis; A.D. means Air Dried Basis.